

Date: Monday, 26/01/2009 8:43:25 AM
 User: Julie Dawson

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: OH-58 FWD X-TUBE ASSEMBLY
Job Number	: 45224		
Estimate Number	: 13213		
P.O. Number	:	Part Number	: D058676101TRN
This Issue	: 26/01/2009 S.O. No. :	Drawing Number	: D058-676-141 REV B
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: / / Type : CROSSTUBES	Drawing Revision	: B
Previous Run	: 45223	Material	:
Written By	:	Due Date	: 02/02/2009 Qty: 1 Um: Each
Checked & Approved By	: <u>JUD 09.01.26</u>		
Comment	: Est Rev:A 08-03-06 new issue DD verified by:ec Est rev B 08.04.02 Removed polish EC verified by: DD		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	D6001105	Crosstube, Material
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part number Description Batch

1 D6001-105 Crosstube B25661

a.m 09.01.29

2.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE
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Comment: MORI SEIKI CNC LATHE LARGE

1-Fill tube with sand & install plugs on both ends as per Folio FA085

2-Turn first side as per Folio FA085

3-File down transition lines smooth.

a.m 09.01.29

3.0	QC1	INSPECT ALL DIM TO DIM SHEET
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Comment: INSPECT ALL DIM TO DIM SHEET

a.m 09.01.29

4.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE
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Comment: MORI SEIKI CNC LATHE LARGE

1-Turn second side as per Folio FA085

2-File down transition lines smooth.

3-remove sand

a.m 09.01.29

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 26/01/2009 8:43:25 AM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: OH-58 FWD X-TUBE ASSEMBLY

Job Number: 45224

Part Number: D058676101TRN

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

a.m 09.01.29 ①

6.0

QC8

SECOND CHECK



Comment: SECOND CHECK

ANN 9-1-29

①

7.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

SL 9-1-30

8.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

a.m 09.01.30 ①

9.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and stock in kanban rack

Location: _____

SL 9-1-30

10.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

09/02/02

Job Completion



MF 09-01-30

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: <u>W5224</u>
Description: Crosstube Assembly (OH-58 High Fwd)		Part Number: D058-676-141
Inspection Dwg: D058-676-141 Rev: A2		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article
 ☐ Prototype

Inspection Sheet	Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	2.245	✓			
	2.069	+0.005/-0.000	2.074	✓			
	2.113	+0.005/-0.000	2.117	✓			
	2.158	+0.005/-0.000	2.163	✓			
	2.183	+0.005/-0.000	2.187	✓			
	2.209	+0.005/-0.000	2.214	✓			
	2.235	+0.005/-0.000	2.240	✓			
	0.100	+/-0.010	0.100	✓			
	0.144 x 30°	+/-0.010	0.144 x 30°	✓			
	R0.063	+/-0.010	R0.063	✓			
	R0.500	+/-0.010	R0.500	✓			
	4.207	+/-0.001	4.207	✓			
SIDE B	2.240	+0.005/-0.000	2.245	✓			
	2.069	+0.005/-0.000	2.074	✓			
	2.113	+0.005/-0.000	2.117	✓			
	2.158	+0.005/-0.000	2.163	✓			
	2.183	+0.005/-0.000	2.187	✓			
	2.209	+0.005/-0.000	2.214	✓			
	2.235	+0.005/-0.000	2.240	✓			
	0.100	+/-0.010	0.100	✓			
	0.144 x 30°	+/-0.010	0.144 x 30°	✓			
	R0.063	+/-0.010	R0.063	✓			
	R0.500	+/-0.010	R0.500	✓			
	4.207	+/-0.001	4.207	✓			
	103.03	+/-0.020	103.030	✓			

Measured by: <u>A.M</u>	Audited by: <u>AWM</u>	Prototype Approval:	N/A
Date: <u>09.01.29</u>	Date: <u>9-1-29</u>	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	07.03.26	New Issue (P/O D058-676-101)	KJ/JLM	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Item	Qty -141	Part Number	Description
1	X	D058-676-141	CROSSTUBE ASSEMBLY (OH-58 HIGH FWD)
2	1	D6001-105	CROSSTUBE
3	2	D2891-1	SUPPORT
4	4	D3595-063-395	RUBBER CUSHION
5	4	MS21920-20	CLAMP (OR MS21920-21)
6	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6001-105
FINISHED LENGTH = 103.03±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D058-676-141" AND BATCH NUMBER ON
INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 11.8 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY,
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 12 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER
QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE
THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS
ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

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B	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENTS STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2); IDENTIFIED CROSSTUBE P/N (ZN C6-2); 0.780/500 WAS 0.700 (ZN B7-3); ADD/REMOVE REF. & ADD TOLERANCES (ZN D7-3, C4-3, C5-3 & D2-3); RELOCATED FLAG #6 (ZN A7-3) PER NCR 210; RE-ORDER TURNING DETAIL VIEW & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	RF	D058-676-141	SHEET 1 OF 4
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DE APPR.	RF	CROSSTUBE ASS'Y (OH-58 HIGH FWD)	NTS
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8

7

6

5

4

3

2

1

12 D2891-1 SUPPORT
2 PL

15 MS21920-20 CLAMP
4 PL

13 D3595-063-395
RUBBER CUSHION
4 PL, (UNDER CLAMP)

13.08

A4-2

D058-676-501

B7-2

D058-676-141
ASSEMBLY DETAIL
(VIEW LOOKING FWD)

FWD

6°

13 15
MS21920-20 CLAMP REF

12
D2891-1 SUPPORT REF

B D3595-063-395
RUBBER CUSHION
REF

D5-2 SECTION B-B
SCALE 5X

B2-2

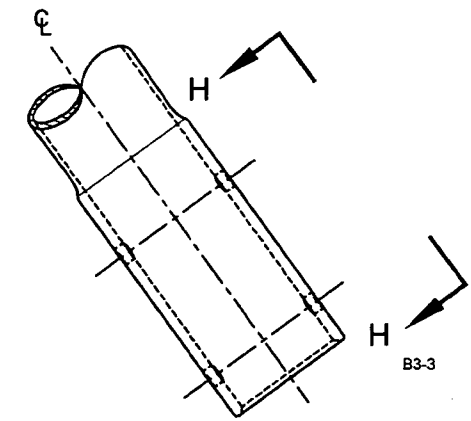
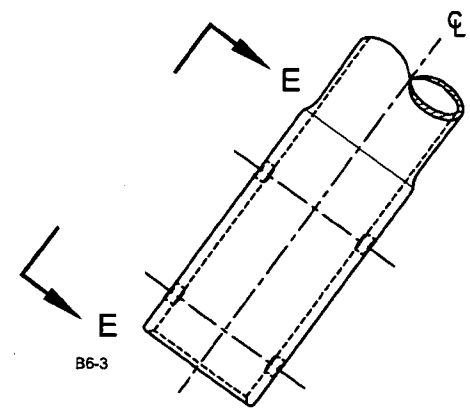
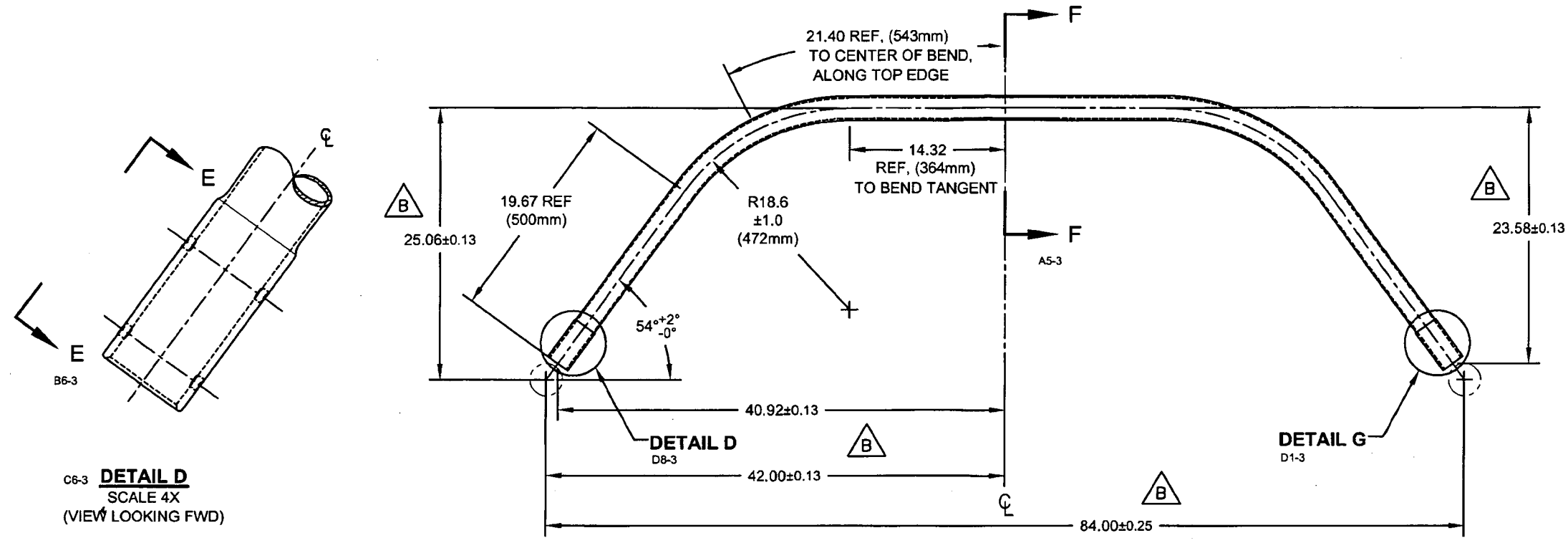
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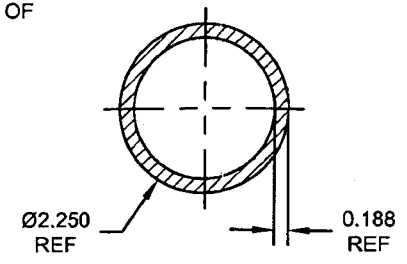
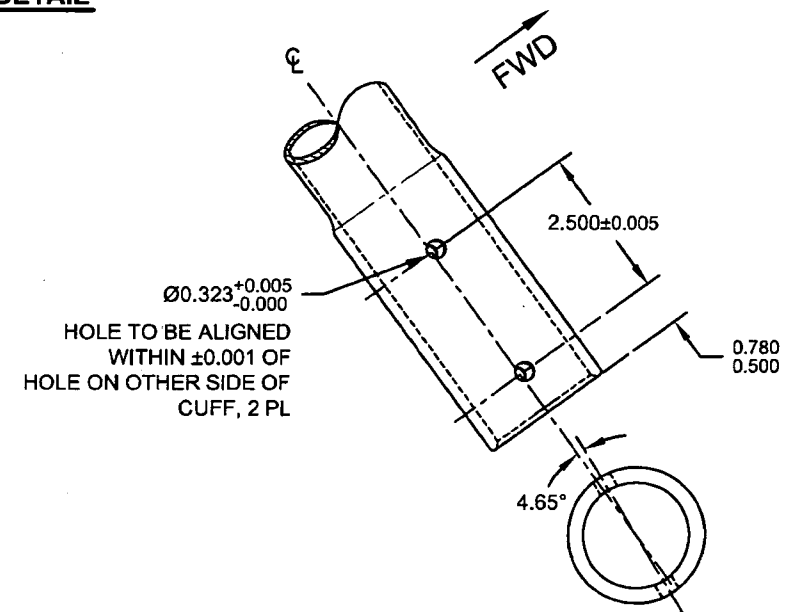
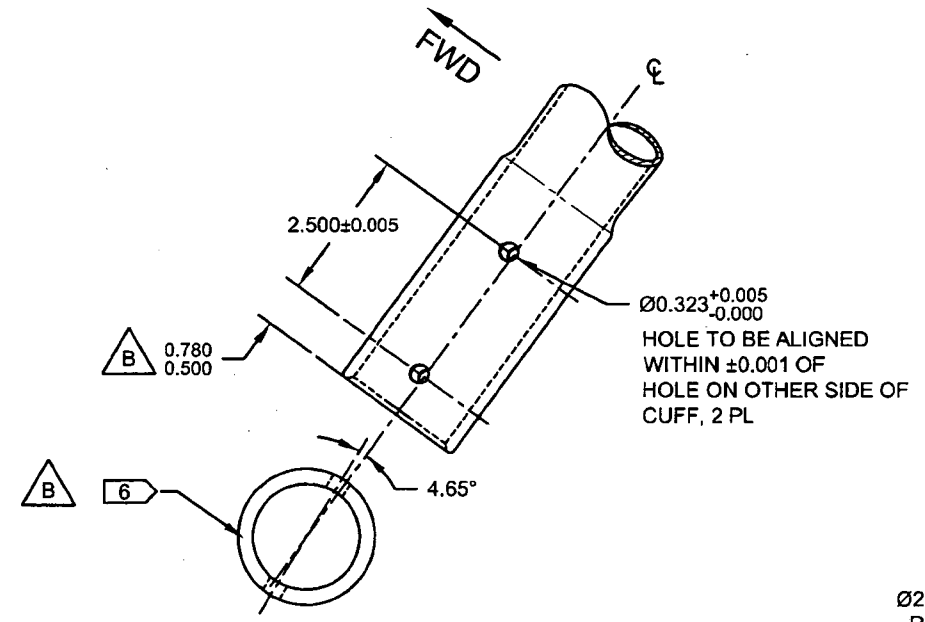
C2-2 VIEW C-C: CUFF DETAIL
SCALE 4X

C7-2 VIEW A-A: CUFF DETAIL
SCALE 4X

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D058-676-501
BENDING AND DRILLING DETAIL
(VIEW LOOKING FWD)



VIEW E-E:
CUFF DETAIL
SCALE 4X

SECTION F-F
SCALE 5X

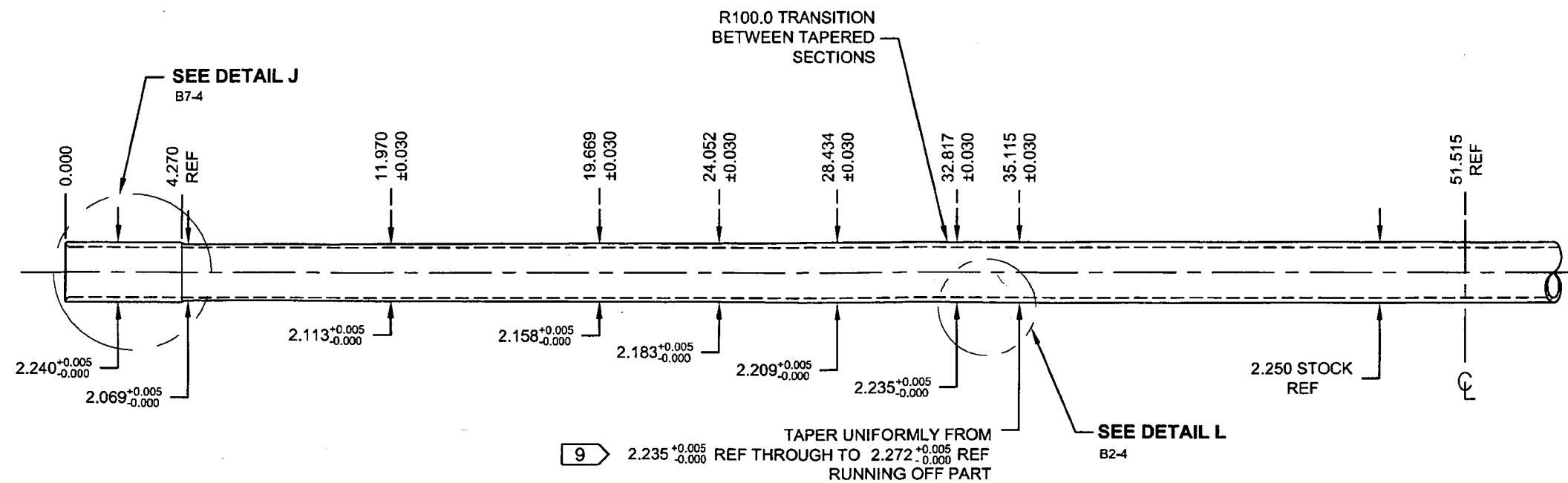
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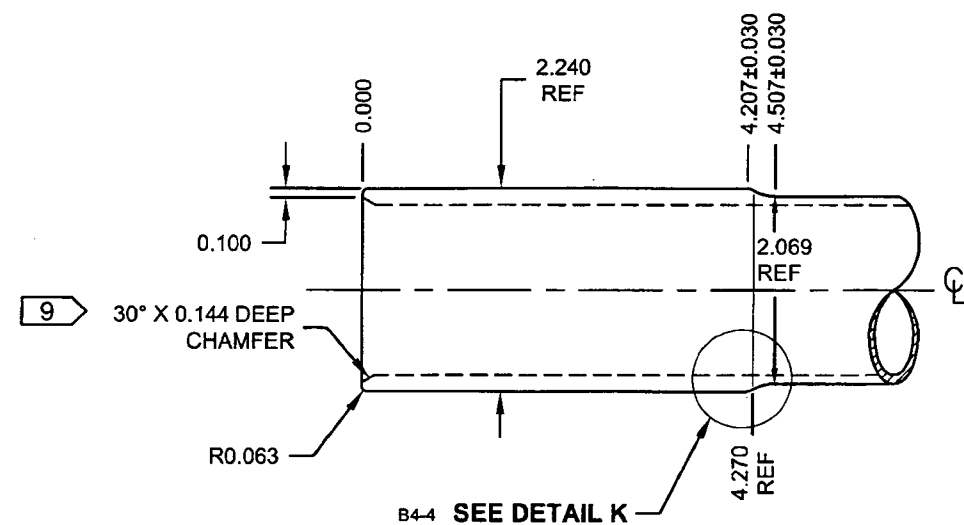
VIEW H-H:
CUFF DETAIL
SCALE 4X

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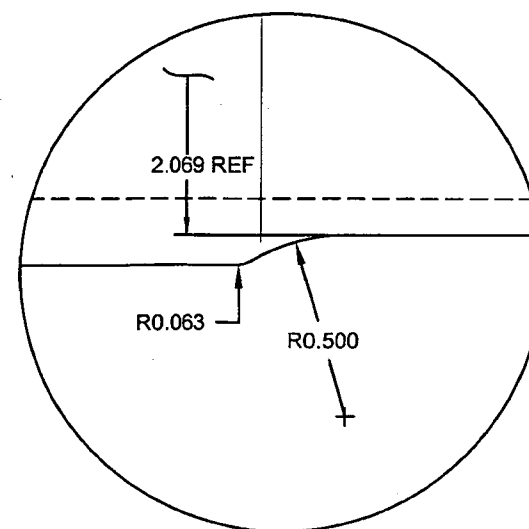
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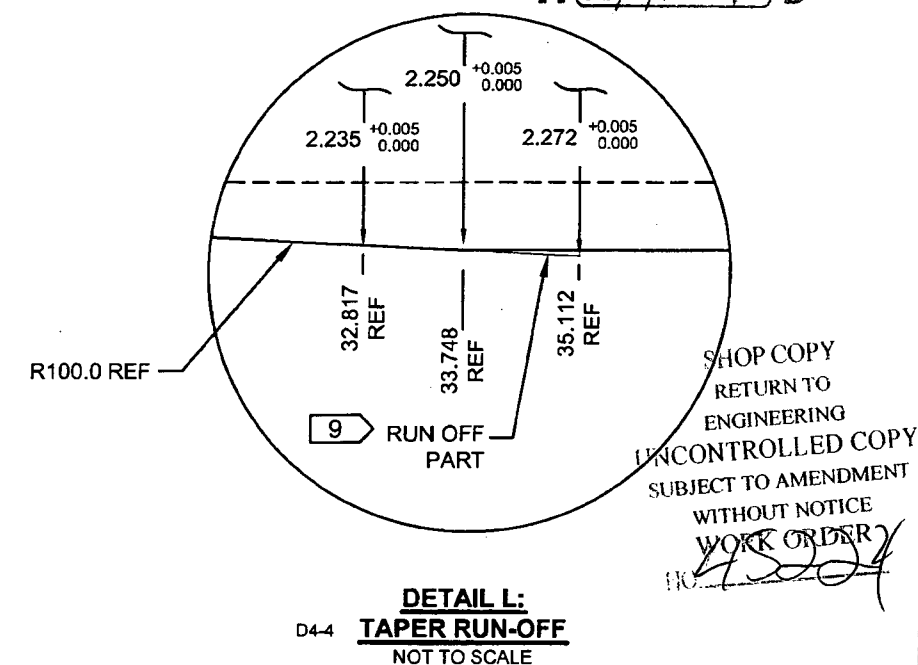
B TURNING DETAIL



D7-4 DETAIL J:
CROSSTUBE CUFF
NOT TO SCALE



A6-4 DETAIL K:
CUFF TRANSITION
NOT TO SCALE



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